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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,296	02/09/2004	Naoki Sadayori	Q79398	8748
23373	7590	05/31/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			SERGEANT, RABON A	
			ART UNIT	PAPER NUMBER
			1711	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/773,296

Applicant(s)

SADAYORI ET AL.

Examiner

Rabon Sergeant

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1-4, the language, "high index of refraction", is subjective language. Despite applicants' arguments, no definition of the term has been provided and no range of values has been disclosed as constituting high indices of refraction. Accordingly, the position is maintained that it cannot be determined what quantitatively constitutes a "high index of refraction". Furthermore, it cannot be determined if the language is limited to the exemplified values of 1.738 (Example 1), 1.744 (Example 2), and 1.757 (Example 3).

With respect to claims 1 and 5,  $X^7$  is a monovalent group; therefore, the definition of  $X^7$  is ambiguous, because it is not seen how  $X^7$  can be a single bond or an alkylene group, given the monovalency of the group.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al. ('214).

Patentees disclose polycarbodiimide copolymers and their production as sheets, which meet applicants' claimed film structure, wherein the use of blends of diisocyanates is disclosed and naphthalene diisocyanate is disclosed as being an especially preferred reactant. Furthermore, diisocyanates yielding structures corresponding to those encompassed by applicants' formula (2) are disclosed. See column 1, lines 54+; column 2, especially line 35; column 3; and column 4, lines 1-15. Patentees further disclose solutions of the polycarbodiimides in aprotic solvents and termination of the polycarbodiimides with monoisocyanates at column 4, lines 20+. Lastly, patentees disclose reaction temperatures within the examples that meet those claimed.

4. Though patentees fail to disclose applicants' claimed ratio relationship between formula (1) and formula (2) of claim 1 or the 5% minimum of claim 5, the position is taken that the production of polycarbodiimide copolymers that satisfy the claims would have been obvious to one of ordinary skill in the art, given the broad range of ratios between formula (1) and formula (2) encompassed by the claims and in view of the fact that patentees specifically recite copolymers and the preferred use of naphthalene diisocyanate. Furthermore, the position is taken that the endpoint of the recited ratio (claim 1) or percent content (claim 5) is close enough to zero (denoting a naphthalene diisocyanate-based homopolymer) or 100%, respectively, that one of ordinary skill in the art would have expected such copolymers to have the same properties as the disclosed naphthalene diisocyanate-derived polycarbodiimide homopolymer. *Titanium*

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*Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). Applicants have provided no showings of unexpected results relative to the polycarbodiimides of Saito et al.

5. The examiner has considered applicants' response; however, the rejection has been maintained for the aforementioned reasons. Given the teachings of the reference, applicants have not established that the claimed polycarbodiimides are not *prima facie* obvious in view of Saito et al. Applicants' arguments fail to appreciate the fact that Saito et al. teach polycarbodiimide copolymers and teach the preferred use of naphthalene diisocyanate. Furthermore, the language, "high index of refraction", is subjective to the extent that it essentially conveys no patentable limitation to the claims. Any index of refraction is adequate to satisfy the language, and applicants' have not established that the pre-carbonized polycarbodiimides of the reference do not possess such an index of refraction. Also, the solutions of claims 3 and 4 and the process of claim 5 are not governed by the argued added limitations of claim 1, because claims 3 and 4 are drawn simply to a solution of the polycarbodiimide, as opposed to a film comprising the polycarbodiimide, and claim 5 is independent of claim 1. Lastly, since the reference discloses diisocyanates that correspond to applicants' "non-naphthalene diisocyanate" species, it is not seen that applicants' amendments of March 9, 2006 have distinguished the claims from the prior art.


6. It is noted that the naphthalene diisocyanate percent content of claim 5 is not fully equivalent to the ratio of m to n within claim 1. Given that n designates the non-naphthalene diisocyanate residue of claim 1, the ratio of claim 1 specifies a percent content for naphthalene diisocyanate residue of 1% to 95%.

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7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

  
**RABON SERGENT**  
**PRIMARY EXAMINER**

R. Sergent  
May 30, 2006